



Developments towards Field-specific Research in Architecture and Design: On Doctoral Studies in Scandinavia since the 1970s

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DEVELOPMENTS TOWARDS FIELD-SPECIFIC RESEARCH IN ARCHITECTURE AND DESIGN: ON DOCTORAL STUDIES IN SCANDINAVIA SINCE THE 1970s

Halina Dunin-Woyseth and Fredrik Nilsson

ABSTRACT

Architectural and design research, especially in the context of doctoral studies, has been pursued in Scandinavia for over forty years. This article sketches how the field of architecture and design has developed over several decades with regard to its three constituent components: professional practice, teaching, and research. The components of practice, teaching, and research acted first as separate, then even as opposite, but later on moved closer together in order to, most recently, synergistically permeate each other.

In the decades prior to the mid-1970s, design scholarship relied mostly on mature practitioners who reflected on their life's work. Teachers were practitioners. The period between the mid-1970s and 1990 brought about an uncritical dialogue with academia, while looking for theoretical and methodological frameworks in established academic disciplines. A polarization between practitioners and researchers emerged. In the 1990s and in the beginning of the new century, a stronger intellectual self-confidence developed among design scholars. Practice, teaching, and research came closer to each other.

Most recent years have shown an even stronger movement towards field-specific research. It coincides with a growing awareness of a continuum from creative practice to scientific research, of the potential of research by art and by design, and of inter- and transdisciplinarity which recognize designerly ways of thinking. A kind of "permeability" between various kinds of practices of architecture and design has been observed.

KEYWORDS

Architectural research, design research, field-specific modes of research, permeability of creative practices, doctoral education

INTRODUCTION

Architectural and design research, especially in the context of doctoral studies, has been pursued in Scandinavia for over forty years. On the occasion of the symposium *The Production of Knowledge in Architecture by PhD Research in the Nordic Countries*, organized by the Nordic Association of Architectural Research (Royal Institute of Technology, Stockholm, 19–20 May 2016), we prepared a presentation that provided the foundation for this article. The main intention of this presentation was to sketch a diachronic review of the main features of the development of doctoral knowledge in Scandinavia. We found it useful to illuminate that development through the contexts of professional practice and teaching, which have both changed over the years, sometimes supporting each other synergistically and other times not. We have built this article on a structuring framework of periodization. We shall attempt to sketch a broad time frame stretching from the mid-1970s to the present time. We are aware that all systems of periodization are more or less arbitrary. Yet, the remarkable can only be comprehended and assessed in light of the historically dominant paradigm.¹ We trust that our periodization will yield such a framework that will help us understand the features of each of the periods of development in architectural practice, education, and research, and also the interplay between them in order to illuminate what kind of doctoral knowledge these periods brought about. We decided to use diagrams that we hope will make the proposed periodization easier to understand. We have presented the reasoning behind the construction of the diagrams elsewhere.²

As a point of departure for this article, we chose to take a quotation by the renowned American architectural scholar Julia Williams Robinson. She maintains that architecture is “an emerging discipline that involves professional practice, research, and teaching”. She proceeds,

The character and effects of its products – disciplinary knowledge, the forms of disciplinary practices, architectural artifacts – are the responsibility of those within the field. Academics, researchers, and professional practitioners are thus jointly responsible to society and to each other.³

We have studied the development of such a scholarly culture, but also noted the cohesion of different practices by individual practitioners.⁴ A variety of evidence of this culture can be traced, and recently the evidence is becoming more pronounced and gaining momentum. We have related this emerging

development to precedents and prevalent international tendencies in practice and research, and we have also collated them with developments in the Scandinavian countries.

We can see the increasing pace of progress in the field of architectural research today and during the last decade by comparing the first edition of the seminal book *Architectural Research Methods* by Linda Groat and David Wang from 2002 with the extended second edition from 2013.⁵ In the acknowledgements of the second edition, David Wang makes the reflection that “In writing it, I was struck by just how much has progressed in this arena even since the first issue of this book a decade ago”.⁶ Groat and Wang note that both the nature and the role of architectural research, as conducted in academia and in practice, have gradually shifted over the decade since the first edition was published. They argue that, from their vantage point, the recent evolution of research in academic and professional settings has led to an increasing convergence among the audiences of their book.⁷ They also underline that the developments in Europe for bridging design with research need special attention, and that the European developments suggest that the domains of design and research become more connected and complementary. As an example in their analysis they use a doctoral thesis by a Belgian architect who did her doctoral education and thesis at Chalmers University of Technology.⁸ Architectural and design research, according to the authors, is in the midst of an exciting time of development, and there have been many attempts in the last decade to bridge the gap between design and research as these have been conventionally understood. Design and research are neither polar opposites nor equivalent domains of activity, Groat and Wang argue; instead, subtle nuances and complementarities exist between the two.⁹

In the important book *Design Research in Architecture: An Overview*, also from 2013, Murray Fraser gives a working definition of architectural research that bridges the gap between design and research:

As a working definition, architectural design research can be described as the processes and outcomes of inquiries and investigations in which architects use the creation of projects, or broader contributions towards design thinking, as the central constituent in a process which also involves the more generalised research activities of thinking, writing, testing, verifying, debating, disseminating, performing, validating and so on.¹⁰

Fraser also underlines that design research is able to blend into other more established research methodologies in the arts, humanities, and sciences, and that it is vital that the design element and these other research methods operate together in an interactive manner, feeding into each other throughout the entire process. When it comes to how this has developed until today, Fraser states that advances in architectural design research can clearly be grouped geographically in the UK and Australia and a few specific countries in Europe, where he explicitly points out Norway, Sweden, Belgium, and the Netherlands. “Those are certainly the locations where various academic conferences have been held over the last decade or so to discuss design research in architecture, frequently linked to the issue of design doctorates.”¹¹

This indicates how important Scandinavian developments in architectural research have been in an international perspective, and that a lot has happened during the last decade in particular. In keeping with the intention for this article, let us now start with the first period in our periodization framework and follow the developments in Scandinavia in particular up to the present day.

UNTIL THE MID-1970s:

INTERNAL CULTURE OF PRACTICE AND TEACHING

Over the years there has been a long tradition of exchange and close bonds between the practice of architecture and design, on the one hand, and education in these fields on the other. At almost all schools of architecture and design, professional practitioners have constituted a significant part of the faculty. That *modus operandi* has been practiced throughout history and is still prevalent today.¹² In architectural pedagogy, critique is an important teaching model – and also plays an important part in architectural practice – in which learning takes place in an individualized process based on understanding between students and their teachers and critics,¹³ where the critics and teachers often are practicing architects. The teaching of architecture has a long history, but the development of research education at schools of architecture spans only a few decades. As an example, the teaching of architecture at Chalmers University of Technology in Gothenburg, Sweden, has a 160-year-old history starting in 1856, but it was only in the mid-1960s that research education started to become structured, and the first doctoral thesis in architecture at Chalmers was published in 1972.¹⁴ Thus, in many countries in Scandinavia and Europe during the 1970s, academic, discipline-based research was considered only slightly relevant to professional practice, and it

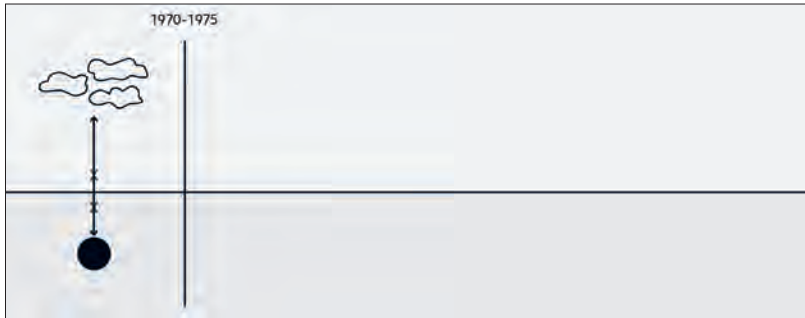


Figure 1. The first phase in the development of doctoral scholarship in architecture and design in Scandinavia (until the mid-1970s). In this and in the following diagrams, the lower part represents the level of professional architectural practices, and the upper part the level of academia with the "clouds" of its disciplines. The arrows show interactions and communications, which are sometimes non-existent or weak and therefore marked with a cross.

therefore met with great scepticism from practitioners. Clearly, field-specific research more closely tied to practice had yet to be developed.¹⁵

The few doctoral projects from the period prior to the mid-seventies were based on the PhD candidates' own professional practice or teaching. The reason to engage in doctoral studies was most often to reflect on and come to a conclusion about one's own professional career. The supervisors of these few PhD students usually had no scholarly background, having been recruited among highly renowned practitioners with no research experience.¹⁶ The reasoning and the language of the doctoral theses reminded mostly of internal professional discussions, without attempts to engage in an academic dialogue with other disciplines in order to contextualize the new architectural knowledge in a broader knowledge landscape.

BETWEEN THE MID-1970s AND 1990: POLARIZATION OF PRACTICE AND THEORY

In the middle of the 1970s, national authorities exerted pressure on the schools of architecture in the Nordic countries in order to develop a more academic – i.e. research-based – conformation in their educational programmes. The schools remained reluctant to this challenge, as there was no strong tradition of academic work in the field. Searching for models for institutionalizing research, many schools looked to various academic disciplines with a more theoretical basis of knowledge, particularly to the social scienc-

es and humanities. These models were often “imported” into architecture programmes. The aim of architectural research was primarily to develop a theoretical foundation rather than to identify what knowledge architects had already developed and what kind of knowledge was needed.¹⁷

Architectural and urban design practice was, collated with established research, mostly considered to be a sort of “applied science”. PhD students with an architectural background were expected to essentially abandon their professional backgrounds as designers and architects. In reading their doctoral theses, one finds hardly any attempts at defining the authors’ scholarly awareness and epistemological stance. In consequence, architectural research of this period was definitely in want of its own intellectual identity in the dialogue between architecture and various other academic disciplines. At the same time, there were few attempts to apply the newly acquired doctoral knowledge in professional practice.

Architectural research was strongly affected by theories and methods from other academic disciplines, and it adopted many of these, but slowly architectural scholars began debating the idea of developing a field-specific identity and epistemological foundation, one based more on the specific knowledge modes of architecture. The Association of Architectural Research was founded in 1987 in Sweden, and a few years later it had become a pan-Scandinavian endeavour and began to publish the *Nordic Journal of Architectural Research* (NJAR). For many years, the NJAR was the only peer-reviewed journal for architectural research in the Nordic countries, and as such it played a substantial role in these developments.

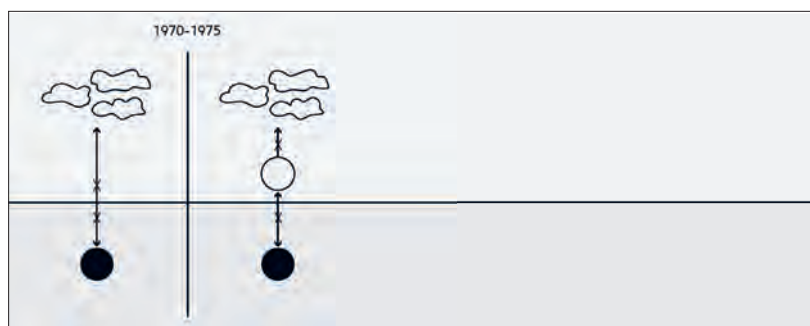


Figure 2. The second phase in the development of doctoral scholarship in architecture and design in Scandinavia (mid-1970s until 1990).

Until the 1970s, teaching in practice-based fields such as architecture, design, and others had been almost entirely based on a master-apprentice model. Renowned practitioners taught at the vocational schools. Research was a peripheral phenomenon with regard to both practice and academia. Salama and Wilkinson compared this dominance of practice in architecture to a kind of “monadic” position.¹⁸ But since the mid-1970s, mostly because of external, ministerial policies, research began to be established in schools of architecture and design. Teaching began to appear as a new “specialized practice”. One could observe a certain polarization among the faculty between those who still pursued the apprentice-master mode of teaching and those who attempted to expand the curriculum to include an introduction to knowledge derived from research. This research was not always regarded as relevant by practitioners, nor sufficiently sophisticated academically by academics.¹⁹ By the 1990s, one could perceive the development of two different profiles among teachers of architecture: the practice-based and the research-based.

THE 1990s: CLOSER DIALOGUE BETWEEN PRACTITIONERS AND RESEARCHERS

This new period in the development was strongly influenced by how doctoral curricula were defined for PhD students, with their background first in architecture and later from other creative practices. The task was to justify such curricula as “academic enough”, primarily in terms of the academia from which the established, discipline-founded bodies of decision makers were drawn. There were attempts to formulate frameworks for what practice-based issues were reasonable and justifiable. At several Scandinavian schools of architecture, a concept of the “making disciplines” was developed. This concept was an attempt to define both the academic standards of research educated from creative practices and the practical relevance of the output of this research.²⁰

During the 1990s, the debates on post-modernism and post-structuralism were cogent for the development of architectural practice and theory. The critique of modernism included ideas from many other fields, and the theoretical discussions showed influences from such disciplines as sociology, psychology, history, and especially philosophy, which can be observed in the writings of some prominent scholars of that time.²¹

Several prominent architectural firms began to develop research strategies. Of these firms the most renowned is Rem Koolhaas and OMA, who presented systematic approaches and research that was closely related to architectural design and educational practice. During this period, books began to be published by architects and offices presenting their work as research on working methods towards systematic investigations of contemporary societies and urban situations.²²

Towards the end of the 1990s, architectural scholars became increasingly critical of adopting theoretical frameworks and methodologies from academia, first from the social sciences and later the humanities. The critics also decried the unreflected use of theories and methods from other disciplines without considering their relevance and appropriateness with regard to the specific character of the architectural field.²³

At several Scandinavian schools of architecture, discussions were held about the importance of defining a more field-specific architectural epistemological stance. Providing a direct incentive for these discussions were the new university laws in Scandinavia, which demanded from all institutions of higher education a more academically professional model of scholarship with a special emphasis on doctoral programmes with organized research education.²⁴

In March 1992, a Nordic network for collaboration in research education for design professionals was established during their constitutive meeting at Aarhus School of Architecture. These schools worked on establishing doctoral programmes based on obligatory research education. Many issues needed to be discussed at a broader level than national contexts, including possible contexts and methods of research education in the fields of *making* knowledge. The network organized a series of Nordic courses in research education that, according to feedback from the PhD students who attended them, contributed to the development of doctoral studies focused on establishing the identity of design thinking in architecture.²⁵

Since the beginning of the 1990s, research education at several Scandinavian schools of architecture has continuously moved towards a more field-specific design scholarship. PhD students come mostly from backgrounds in various *making* professions, and their research objects are derived most often from their professional practice. The concept of the *making disciplines* gradually coalesced into one of the epistemological premises for design research ed-

ucation. In the Scandinavian context, this concept is not about a traditional discipline in the strict sense, but rather an attempt to formulate a kind of quality-supportive framework for making discourse.²⁶ This framework addresses the criteria of both professional relevance and research scholarship. This opens the possibility for developing a culture of dialogue with regard to both practice and academia.

In 1996, Delft University of Technology (TU Delft) offered the conference Doctorates in Design and Architecture, which emphasized the scientific status of design research as the basis for doctoral research in architecture. The conference displayed a broad, differentiated, and specialized field of research areas and issues.²⁷ It made it clear that many universities had, at that time, an inadequate research tradition. This collective awareness probably accelerated the emergence of doctoral studies more specific to the field of architecture and design, but it also visualized how the academic and professional worlds were more or less two separate realms. Design approaches and methods were recognized as important “partners” in addressing challenges in the built environment.

Four years later, this conference was followed by another international conference called Research by Design.²⁸ Presentations were made by both researchers and professional practitioners. The architects were represented by, among others, Ben van Berkel and Wiel Arets, who acted confidently and convincingly, while researchers seemed much less confident of their legitimacy both with regard to the profession and to academia. This conference

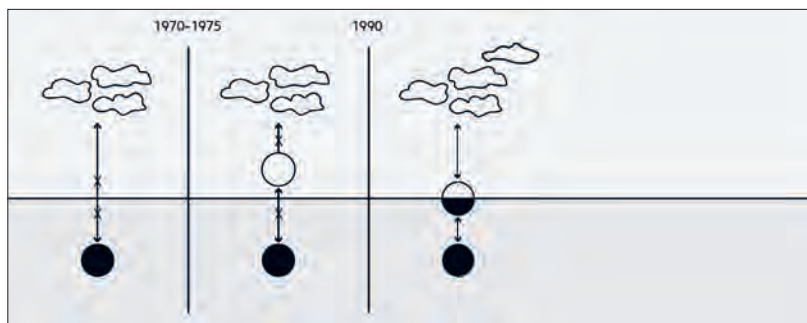


Figure 3. The third phase in the development of doctoral scholarship in architecture and design in Scandinavia (the 1990s).

can be regarded as a turning point in the development of architectural research, as it presented for the first time a continuum between scientific research and creative practice, identifying *research by design* as a potential path towards more field-specific research.

In 1997, a year after the first conference at TU Delft, a group under the aegis of Christopher Frayling presented the influential report *Practice-Based Doctorates in the Creative and Performing Arts and Design* in the UK. They maintained that the development of research approaches in academic fields such as the social sciences, humanities, and other established disciplines often had lost features of “pure scientific methods”, allowing for hybrid modes – a phenomenon the group described as “... a continuum from scientific research to creative practice”.²⁹ The second Delft conference seemed to illustrate this phenomenon within the field of architecture.

Throughout the 1990s, a new awareness was growing in architectural milieus of practitioners and educators. There were continuous efforts to recognize designerly ways of thinking as eminent, equal-status contributors both to



Figure 4. Cover of the book for the Research by Design conference in Delft in 2000.

the new developments in contemporary society and to knowledge production. More reflective use of the theoretical and methodological conceptions borrowed from the established academic disciplines in architecture-based research projects at the doctoral level succeeded in generating interdisciplinary research of high quality. The architectural research milieus built a growing intellectual self-confidence during the 1990s. The Nordic schools of architecture encouraged their PhD students to explore new field-specific research approaches.

Internationally, several PhD programmes were initiated that also consciously tried to develop formats for research that take the specific nature of architectural practice and its particular knowledge as a point of departure. In the mid-1990s, the influential new PhD by the Architectural Design programme at The Bartlett, University College London, offered doctoral studies that would “primarily involve design research investigations that are carried out as speculative and theoretical attempts to advance the discourse of architecture as a broad intellectual subject”.³⁰ During the same period, the Design Practice Research programme at RMIT in Melbourne, Australia, began to take shape as a PhD research programme,³¹ with the intention to “inculcate an approach to research that was not ‘about’ design, but that was *research in the medium of design itself*”.³²

In this decade, the traditionally distinct lines between practitioners and theoreticians began to blur. The design studio remained at the core of teaching architecture, and the relations between teachers and students usually continued to have the traditional master-apprentice character. Nevertheless, the teachers of design who got involved in research no longer seemed to change their loyalty to practice, but often sought instead to build bridges between practice and theory by developing more field-specific research. Slowly, a broader spectrum of practices emerged that included design practice, teaching, and research.

THE 2000s:

NEW MODES OF DESIGN AND RESEARCH

During the first years of the new millennium, discussions intensified about the specific features of architectural research with regard to professional practice in the field. Much criticism was addressed to advanced architectural research that heavily relied on disciplines outside of architecture. Many doctoral theses borrowed their theoretical and methodological concep-

tions from philosophy, sociology, literature, and cultural studies. It became clear how challenging it was to competently assess such theses. Alejandro Zaera-Polo maintained that “Often this has resulted in some of the most advanced research in architecture looking like bad movies, bad sociology, or bad literature”.³³

Zaera-Polo pleaded the importance of exploring architecture-specific knowledge. He asserted that current research was aimed at fields of knowledge that were either supra-disciplinary (philosophy, sociology, economy) or sub-disciplinary (construction management, engineering). He saw opportunities to produce knowledge by integrating both these levels and held that this would be thinkable through research engaged in using architectural practice and processes of altering the built environment.

Some architectural offices, like MVRDV, Chora, Foreign Office Architects, and UN Studio, decided to use architectural tools, supported by new technology, while analysing the complexity of contemporary society and exploring relations between various phenomena. Examples of new research approaches combining architectural design tools and design projects to investigate knowledge fields and disciplines close to architecture and urbanism are found in the postgraduate programme for architects at the Berlage Institute in Rotterdam,³⁴ and not least in the PhD programmes at The Bartlett and the RMIT that developed further during the first decade of the century.

The Nordic network for collaboration strove to professionalize research education in the last years of the 1990s. One of their initiatives was to arrange a Scandinavian research education programme in the years 1999 and 2001. The group decided that the next phase of this collaboration should prepare young researchers to meet the demands of new types of research and broader expertise.³⁵ In 2003, a new Nordic pilot study course called “Transdisciplinary Research and the Making Professions” was arranged in order to introduce doctoral students to the international debate on new modes of knowledge production.

First and foremost, the course addressed transdisciplinarity as it was formulated in the now-canonical work *The New Production of Knowledge*.³⁷ This work maintains that practice contexts are also sites for knowledge production centred on specific problems close to their application. In transdisciplinary research, both problems and solutions are defined beyond any single

discipline. The authors of the book called this mode of knowledge production Mode 2, as opposed to Mode 1, which is the traditional, academic mode of research. Mode 2 and transdisciplinarity have enticed design scholars as a new “in-practice” model of research that has strong similarities with design. Slowly, the awareness that there already existed a “continuum from scientific research to creative practice” grew in various academic milieus, and it was probably one of the reasons that an increasing number of PhD projects with integrated creative practice were accepted by adjudication committees at various schools of architecture and design. The difference from the earlier periods was that the creative practice was used not only for illustrative, but also for explorative and argumentative approaches. Since the 1990s a continuously growing number of research projects in Scandinavia can be regarded as having been carried out “by design”. One can trace a longer history of this trend, which started in the discussions of artistic development as early as the 1970s. In the first decade of this century, several PhD theses opened the door to a bolder search for ways of carrying out field-specific research based on creative practice in architecture and design.³⁸

In the same period of time, there has been an increased interest in research among architecture firms. Several Scandinavian firms, including White, 3xN, Arkitema, and Sweco, have intensified the use of research to support innovation and creative design.³⁹ They have developed research strategies for collaborating with academia in both research and teaching.

As mentioned earlier, the development of research education and doctoral scholarship in architecture and design in the Nordic countries was induced

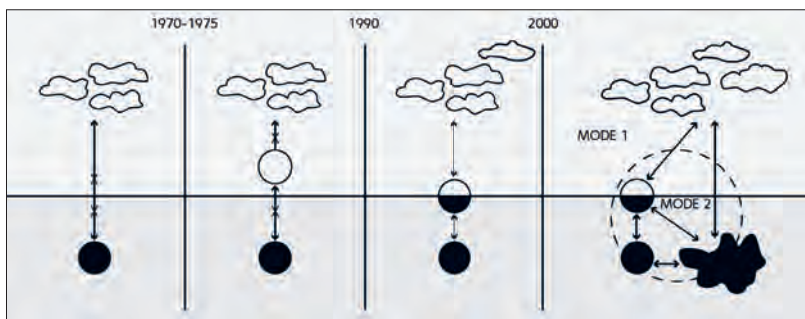


Figure 5. The fourth phase in the development of doctoral scholarship in architecture and design in Scandinavia (after 2000).

by national university laws, thus urging the establishment of organized research education in the region. The Bologna-Berlin guidelines expanded such development to a broader European context. These guidelines appear to induce doctoral research more towards Mode 2 of knowledge production than towards Mode 1, which is in support of interaction between research and practice.

The international conference The Unthinkable Doctorate, organized by the Sint-Lucas School of Architecture and the Network for Theory, History and Criticism of Architecture (NETHCA) in Brussels in 2005,⁴⁰ has played an important role in the debate on new modes of doctoral research. This conference, besides its broader international impact, supported the establishment of Sint-Lucas's own research education programme. The Bologna-Berlin policies acknowledged doctoral studies as the third cycle in European higher education, and for the Sint-Lucas School of Architecture the guidelines of the Bologna-Berlin process made it possible to develop experimental, practice-based concepts for research and doctoral scholarship.⁴¹

In 2009, the Sint-Lucas School of Architecture, in collaboration with Chalmers University of Technology, organized a new conference in Brussels called Communicating (by) Design. The proceedings from the conferences illustrate how the teaching milieu of the institution broadly engaged in experimental and investigative doctoral studies within a very young PhD milieu. The third conference of this series at Sint-Lucas School of Architecture, Knowing (by) Designing, explored research derived from a broader spectrum of creative fields of architecture, design, art, and music, and pursued various field-specific modes. Recently, a fourth conference was arranged in Brussels in April 2017 on the theme of Impact by Designing, which discussed the increasingly important aspect of the impact research has on society in relation to architecture, design, art, and music.

The proceedings of this series of conferences in Delft and Brussels, especially between 1996 and 2013, document the growing awareness among practitioners, teachers, and researchers that their search for field-specific modes of research build bridges between the field's practice and its discourse, and between this discourse and the realm of academia. While the first conference in Delft in 1996 expressed a certain inextricable divergence of the field at the time, the second in 2000 brought up the term and the concept of *research by design*. The first Brussels conference in 2005 went still further by posing the

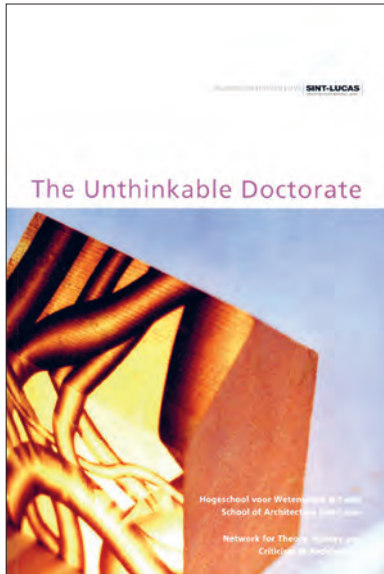


Figure 6a. Cover of the proceedings of the conference *The Unthinkable Doctorate* organized by Sint-Lucas and NETHCA in Brussels, 2005..

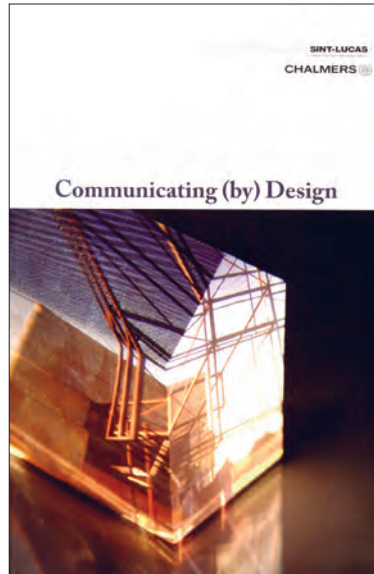


Figure 6b. Cover of proceedings of the conference *Communicating (by) Design* organized by Sint-Lucas and Chalmers in Brussels, 2009.

question of whether it would be possible to build doctoral scholarship in a more field-specific mode than what constituted the traditional doctorates in architecture. The second Belgian conference in 2009 reaffirmed this question and debated the issue of disseminating this new scholarship – how and to whom it should be communicated. The Brussels conference of 2013 presented several radical epistemological grounds for design scholarship and for the need to mediate these grounds with practice, education, and research. The questions were also posed whether boundaries between these three notions should not be challenged.

In studying the proceedings of the aforementioned conferences, one could conclude that the profile of vocational studies has developed towards a new phase. There is much evidence to support the conclusion that the spectrum of various practices has become more nuanced: practice-based educators have begun using teaching as practice experiments, closely related to research experiments, and research-based teachers are including practice in their work, which is increasingly field-specific. The various epistemological stances and pedagogical positions have begun to permeate one another. The

polarization observed in previous decades has strongly abated, and a more graduated continuum from scientific research to creative practice is definitely observable in various practices in the field of architecture and design.

THE 2010s:

MORE FIELD-SPECIFIC, PRACTICE-BASED RESEARCH

According to the proposed periodization of the development of design as a field of inquiry, the most recent period began around 2010. It corresponds with the start of a research programme under the name of “Architecture in the Making: Architecture as a Making Discipline and Material Practice”, which was endowed with a Strong Research Environment grant for 2011–17 from the Swedish Research Council Formas. This research programme was part of an initiative in which the four schools of architecture in Sweden initiated a national collaboration, including research and research education, to strengthen architectural research and create a critical mass of researchers and doctoral students. The aim of the research environment “Architecture in the Making” has been to develop theories and methods from the perspective of, and in collaboration with, architectural practice in order to reinforce ar-

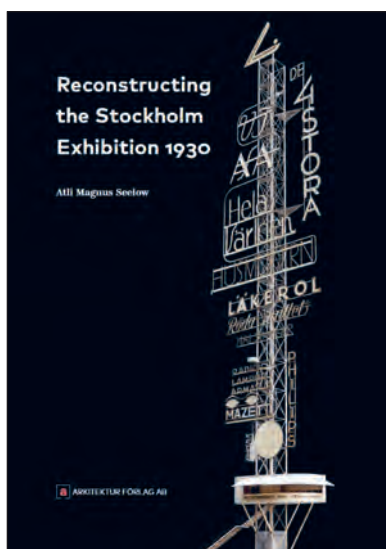


Figure 7a. Cover of the book *Reconstructing the Stockholm Exhibition 1930* by Atli Magnus Særlow (Arkitektur förlag, 2016).

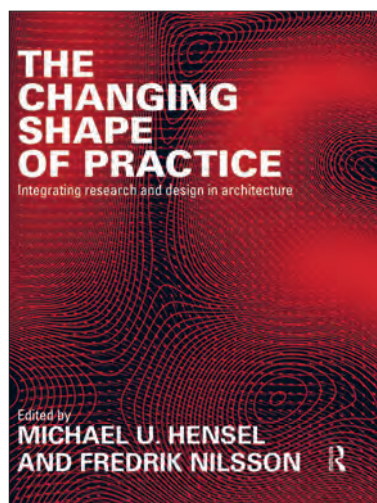


Figure 7b. Cover of the book *The Changing Shape of Practice: Integrating Research and Design in Architecture*, edited by Michael Hensel and Fredrik Nilsson (Routledge, 2016).

chitectural research.⁴⁴ A new, important aspect of the programme has been the collective learning, training in, and practice of research in the wider communities of professional practice and academia. Creative practices encounter research collaboration with doctoral, postdoctoral, and senior research, often in educational situations at the four Swedish schools of architecture. Together they form “permeable practices” of design practitioners and research practitioners in the creative fields. Seen from a perspective of several years, these endeavours seem to have contributed to a more field-specific scholarship in the milieus involved. One can perceive a growing intellectual self-confidence, which espouses new, justifiable, field-specific academic autonomy instead of the earlier tradition of “emulated scholarship”.

Seminars, symposia, and conferences have been organized around main themes. Researchers with different perspectives on research are invited to develop research projects, as well as to meet, exchange ideas and views, and form frameworks grounded both in traditional academia and in the emerging approaches of research by design and also of other practice-based studies. The results and activities have been published in various forms and include,



Figure 7c. Cover of the doctoral thesis *An Inquiry into the Re-Creative Workings of the Unheimliche in Interior Architecture* by Karel Deckers (Chalmers, 2015).



Figure 7d. The doctoral thesis *The Photographic Absolute: An Architectural Beginning* by Pavlina Lucas (AHO, 2014).

for instance, historical studies that integrate teaching and research, and in combination with traditional research methods use the practical methods of building models as well as other tools from architectural practice as means of architectural research.⁴⁵ In parallel, and as another example, studies have been conducted on how contemporary architectural practice is changing and finding new forms as a result of the closer integration of research approaches into design work.⁴⁶ Also, doctoral and licentiate theses have come out of this environment, in which different practices from architectural education and different methods of modelling, material experiments, and production of artefacts are integrated into the research in order to articulate architectural theories and methods.⁴⁷ Some other examples have also emerged out of other Nordic environments, in which a similar integration of research, practice, and education takes new, innovative forms.⁴⁸

One of the projects within the “making research environment” focuses on the need for an adequate assessment of the output of innovative, field-specific design research. The authors pledge that in order to achieve recognition for the results of such innovative research among both practitioners and researchers of architecture (and other knowledge producers), principles for assessing this kind of research should be debated in a broader contention between design practice and (design) academia. Various practices, such as design and research practices, discursive and making practices, hermeneutic and material practice, all of them within a continuum between scientific research and creative practice, are “permeable” and demand specific criticism and assessment better attuned to this “permeability” between modes of practice. The authors maintain that adequate assessment of research results in practice-based, creative fields should build on a double judgement of both practitioners and scholars through negotiations between connoisseurship and criticism.⁴⁹

At the current moment, we perceive “making scholarship” as a broad and inclusive field of inquiry that invites traditional research as well as the most innovative experiments to be carried out as research by design or by art. In this new landscape of making scholarship, we see a place for hybrid modes of research that could take different positions on the continuum between scientific research and creative practice.

CONCLUDING REMARKS

This article was inspired by a statement by the renowned American architecture and design scholar Julia Williams Robinson, written in 2001 – during the third decade of the international debate on building a sustainable field of inquiry in architecture and design. She maintained that architecture was “an emerging discipline that involves professional practice, research and teaching”. Further on, she claimed that the responsibility for each of these spheres of activity belongs to separate groups with specialized expertise who are jointly responsible to society and to each other. We examined the validity of Robinson’s statement with regard to the developments in the field of architecture and design in Scandinavia, and made some detours to other European countries to contextualize the developments in the Nordic region.

In the decades prior to the mid-1970s, design and architectural research was not considered pertinent to professional practice and thus was seen as marginal. Design scholarship of that period relied mostly on mature practitioners who reflected on their life’s work. Teachers were practitioners. There was no need for communicating the practitioner-researchers’ reflections to others outside of their professional circles. Doctoral knowledge was largely a more advanced professional debate.

The period between the mid-1970s and 1990 brought about various national policies that demanded developing research also in the vocational fields of academia, including architecture. With no models of their own for field-specific scholarship, the aspiring researchers attempted to build a timid, uncritical dialogue with academia while looking for theoretical and methodological frameworks of established academic disciplines. This period can be characterized by architectural research, primarily PhD research, of weak relevance to the practice, on one hand, and often naive use of intellectual tools borrowed from academia, on the other. A polarization emerged between practitioners and researchers in the field of architecture and design.

In the 1990s and at the beginning of the new century, a stronger intellectual self-confidence developed among design scholars. They strove for research that would be more pertinent to professional practice, and at the same time more reflective and critical with regard to using the theoretical and methodological tools from academically established disciplines. In this period, many attempts by PhD students were made to develop field-specific modes of research, and several innovative PhD programmes were initiated internation-

ally. Teaching was slowly becoming an acknowledged arena of developing scholarship. Practice, teaching, and research came closer to one another.

In the most recent years, an even stronger movement towards field-specific research can be noted. It coincides with the growing awareness of a continuum from creative practice to scientific research, of the potential of research by art and by design, of inter- and transdisciplinarity that recognize design-erly ways of thinking. We can observe a kind of “permeability” between various kinds of architecture and design practice. The statement by Julia Williams Robinson can therefore be slightly modified. Architects and designers as individuals have developed joined, synergistic expertise with regard to professional practice, teaching, and research. Even if this phenomenon is still limited in terms of volume, it will continue to grow over time through the complex and advanced contemporary practice and through the education of new generations of architects and designers.

This article followed how PhD knowledge in architecture and design has changed over time. It sketched diachronically how the field of architecture and design has developed over several decades with regard to its three constituent components: professional practice, teaching, and research; and how these components were initially separate, then became oppositional, before recently starting to converge in order to synergistically permeate one another. It is also clear that organized doctoral studies began rather early in Scandinavia compared with many other European countries, and together with the UK and the Netherlands, for example, the Scandinavian countries seem to have been at the forefront of doctoral studies in architecture even internationally. Most European countries began to follow the policies in this respect at the time of the Bologna-Berlin declaration (2003), a decade after the Scandinavian countries adopted their respective university laws. The most recent developments in architectural research and in doctoral studies in Scandinavia, where research has become even more integrated with practice than earlier, have been noticed and reviewed by international scholars (e.g. Linda Groat, David Wang, and Murray Fraser).

One intention of the article has been to give design practitioners and scholars a broader awareness about and stronger confidence in the importance of various forms of practice in their work – both the professionally specialized practices and the “permeable” ones. Another objective has been to encourage present and prospective doctoral students to search for ever more adequate

forms of field-specific PhD knowledge in dialogue with a broad audience. This audience is clearly growing today – and is becoming even more multifaceted and innovative through a broad range of actors – with the increasing interest in and relevance of research in contemporary architectural practice and education.

NOTES

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² Halina Dunin-Woyseth, “On Designed Knowledge Artefacts”, in Johan Verbeke and Adam Jakimowicz (eds.), *Communication (by) Design* (Brussels: School of Architecture Sint-Lucas, 2009).

³ Julia Williams Robinson, “Form and Structure of Architectural Knowledge: From Practice to Discipline”, in Andrzej Piotrowski and Julia Williams Robinson (eds.), *The Discipline of Architecture* (Minneapolis: University of Minnesota Press, 2001), p. 62.

⁴ Halina Dunin-Woyseth and Fredrik Nilsson, “Building a Culture of Doctoral Scholarship in Architecture and Design: A Belgian-Scandinavian Case”, *Nordic Journal of Architectural Research*, 1/23 (2011), pp. 41–55; Halina Dunin-Woyseth and Fredrik Nilsson, “Research as a Driving Force for Change: On Triadic Practice in Architecture”, *Reflections +17* (2013).

⁵ Linda Groat and David Wang, *Architectural Research Methods*, 2nd edn. (Hoboken: Wiley, 2013).

⁶ *Ibid.*, p. vii.

⁷ *Ibid.*, pp. 3–4.

⁸ Nel Janssens, *Utopia-Driven Projective Research: A Design Approach to Explore the Theory and Practice of Meta-Urbanism* (Gothenburg: Chalmers University of Technology, 2012).

⁹ Groat and Wang, *Architectural Research Methods*, pp. 56–57.

¹⁰ Murray Fraser, “Introduction”, in *Design Research in Architecture: An Overview* (Farnham: Ashgate, 2013), pp. 1–14, esp. pp. 1–2.

¹¹ *Ibid.*, p. 9.

¹² Ashraf M. Salama and Nicholas Wilkinson, *Design Studio Pedagogy: Horizons for the Future* (Gateshead: The Urban International Press, 2007), pp. 3–8.

¹³ Jadwiga Krupinska, *What an Architecture Student Should Know* (New York: Routledge, 2014), pp. 10–11; Jadwiga Krupinska, *Att skapa det tänkta* (Lund: Studentlitteratur, 2016), pp. 9–11.

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- ¹⁶ Bobo Hjort, "Hundred Years of Swedish Architectural Research", *Nordic Journal of Architectural Research*, 4 (2002), p. 85.
- ¹⁷ *Ibid.*, p. 85.
- ¹⁸ Salama and Wilkinson, *Design Studio Pedagogy*, p. 5.
- ¹⁹ Claes Caldenby, "Forskning och praktik: Särart eller samverkan?", *Nordisk Arkitekturforskning*, 1–2 (2000), pp. 97–100; Hjort, "Hundred Years of Swedish Architectural Research", p. 86.
- ²⁰ Halina Dunin-Woyseth, "Making-Based Knowledge: Between Identity and Change", in Ashraf M. Salama, William O'Reilly, and Kay Noschis (eds.), *Architectural Education Today: Cross-Cultural Perspectives* (Lausanne: Comportements, 2002).
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- ²⁴ Dunin-Woyseth and Nilsson, "Building (Trans)Disciplinary Architectural Research", p. 84.
- ²⁵ Halina Dunin-Woyseth, "The 'Millennium Programme': Looking Back, Looking Forward", *Nordic Journal of Architectural Research*, 2 (2002).
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- ²⁷ Annemieke Bal-Sanders, Leen van Duin, Richard Foqué, Herbert van Hoogdalem, Floor Moormann, Theo van der Voordt, and Herman van Wegen (eds.), *Doctorates in Design and Architecture: Conference Book* (Delft: Faculty of Architecture, Delft University of Technology, 1996); *idem* (eds.), *Doctorates in Design and Architecture: Proceedings Volume 1 – State of the Art* (Delft: Faculty of Architecture, Delft University of Technology, 1996); *idem* (eds.), *Doctorates in Design and Architecture: Proceedings Volume 2 – Results and Reflections* (Delft: Faculty of Architecture, Delft University of Technology, 1996).
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- ³² Leon van Schaik, "The Evolution of the Invitational Program in Design Practice Research", in Leon van Schaik and Anna Johnson (eds.), *Architecture & Design by Practice, by Invitation: Design Practice Research at RMIT* (Melbourne: onepointsixone, 2011), pp. 14–37, esp. p. 20.
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- ³⁴ See, for example, Dean, *Hunch 9: Disciplines*.
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- ⁴² Johan Verbeke and Adam Jakimowicz (eds.), *Communicating (by) Design* (Brussels: School of Architecture Sint-Lucas, 2009).
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